

CLAIMS

We claim:

1. A targeting construct comprising:
 - (a) a first polynucleotide sequence homologous to at least a first portion of a RPTPB gene;
 - (b) a second polynucleotide sequence homologous to at least a second portion of the RPTPB gene; and
 - (c) a selectable marker.
2. A method of producing a targeting construct, the method comprising:
 - (a) providing a first polynucleotide sequence homologous to at least a first portion of a RPTPB gene;
 - (b) providing a second polynucleotide sequence homologous to at least a second portion of the RPTPB gene;
 - (c) providing a selectable marker; and
 - (d) inserting the first sequence, second sequence, and selectable marker into a vector, to produce the targeting construct.
3. A cell comprising a disruption in a RPTPB gene.
4. The cell of claim 3, wherein the cell is a murine cell.
5. The cell of claim 4, wherein the murine cell is an embryonic stem cell.
6. A non-human transgenic animal comprising a disruption in a RPTPB gene.
7. The non-human transgenic animal of claim 6, wherein the transgenic animal is a mouse.
8. A cell derived from the transgenic mouse of claim 7.
9. A method of producing a transgenic mouse comprising a disruption in a RPTPB gene, the method comprising:
 - (a) introducing the targeting construct of claim 1 into a cell;
 - (b) introducing the cell into a blastocyst;
 - (c) implanting the resulting blastocyst into a pseudopregnant mouse, wherein said pseudopregnant mouse gives birth to a chimeric mouse; and
 - (d) breeding the chimeric mouse to produce the transgenic mouse.

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10. A method of identifying an agent that modulates the expression or function of a RPTPB gene, the method comprising:
 - (a) providing a non-human transgenic animal comprising a disruption in a RPTPB gene;
 - (b) administering an agent to the non-human transgenic animal; and
 - (c) determining whether the expression or function of the disrupted RPTPB gene in the non-human transgenic animal is modulated.
11. A method of identifying an agent that modulates the expression or function of a RPTPB gene, the method comprising:
 - (a) providing a cell comprising a disruption in a RPTPB gene;
 - (b) contacting the cell with an agent; and
 - (c) determining whether the expression or function of the RPTPB gene is modulated.
12. The method of claim 11, wherein the cell is derived from the non-human transgenic animal of claim 6.
13. An agent identified by the method of claim 10 or claim 11.
14. A transgenic mouse comprising a disruption in a RPTPB gene, wherein there is no significant expression of the RPTPB gene in the transgenic mouse.
15. A transgenic mouse comprising a homozygous disruption in a RPTPB gene, wherein the transgenic mouse exhibits a developmental abnormality.
16. The transgenic mouse of claim 15, wherein the developmental abnormality comprises death at about embryonic age 9.5-10.5 days.
17. The transgenic mouse of claim 15, wherein the transgenic mouse exhibits reduced vascular development in one or more of the embryo, the placenta and the yolk sac, relative to a wild-type control mouse.
18. The transgenic mouse of claim 15, wherein the transgenic mouse exhibits reduced hematopoiesis, relative to a wild-type control mouse.
19. The transgenic mouse of claim 15, wherein the transgenic mouse at about embryonic age 9.5 days exhibits an absence of blood and/or blood vessels.
20. A cell derived from the transgenic mouse of claim 14.

21. A method of identifying an agent that ameliorates a phenotype associated with a disruption in a RPTPB gene, the method comprising:

- (a) administering an agent to a transgenic mouse comprising a disruption in a RPTPB gene; and
- (b) determining whether the agent ameliorates the phenotype.

22. An agent identified by the method of claim 21.

23. An agonist or antagonist of RPTPB.

24. Phenotypic data associated with a transgenic mouse comprising a disruption in a RPTPB gene, wherein the phenotypic data is in an electronic database.